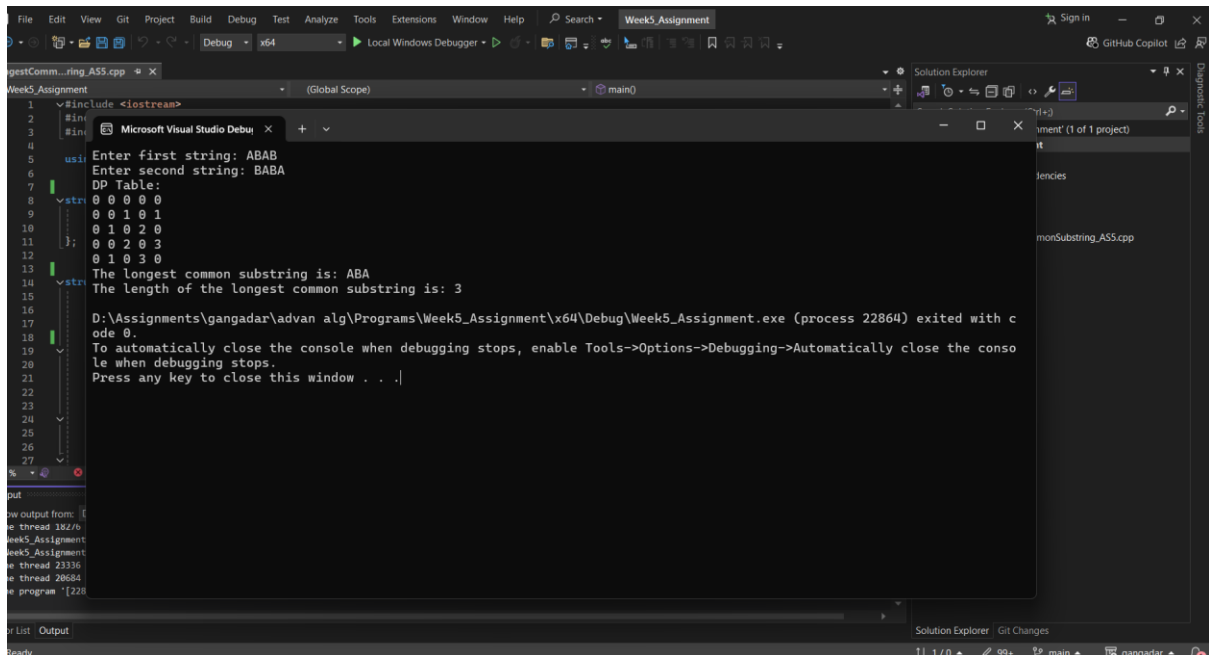


GangadharGowdJogi

## Week5 - Longest Common Substring

### Sample Execution Screenshot

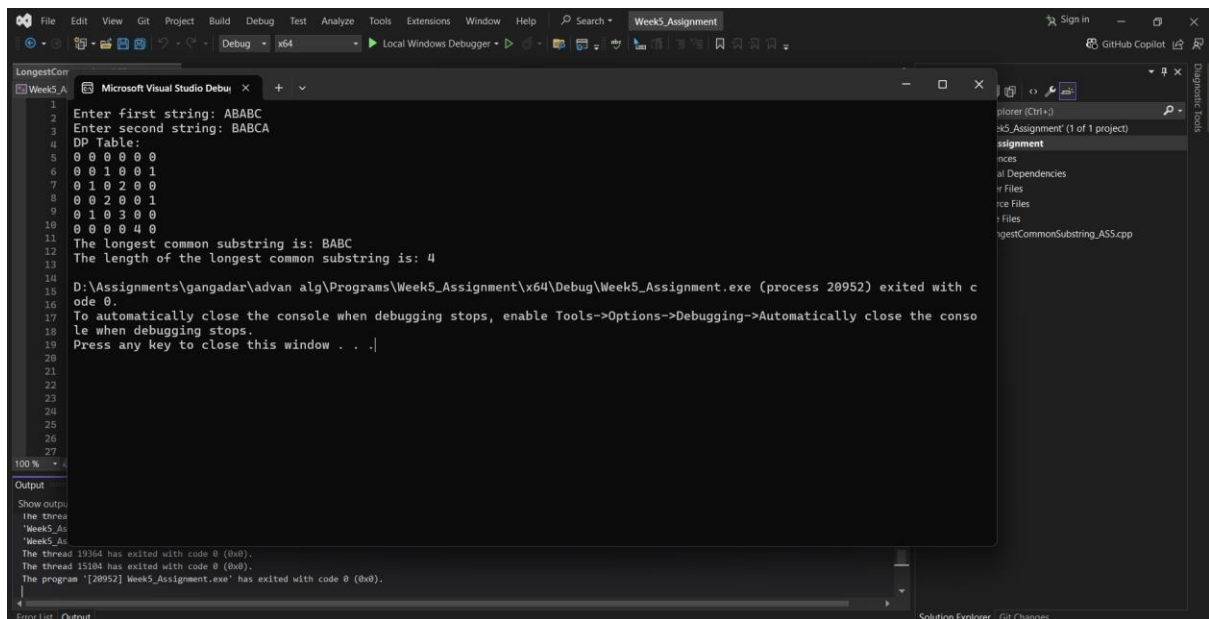


```
1 #include <iostream>
2 #include <string>
3 #include <vector>
4 using namespace std;
5
6 int main()
7 {
8     string s1, s2;
9     cout << "Enter first string: ";
10    cin >> s1;
11    cout << "Enter second string: ";
12    cin >> s2;
13
14    // DP Table
15    vector<vector<int>> dp(s1.length(), vector<int>(s2.length(), 0));
16
17    for (int i = 0; i < s1.length(); i++)
18    {
19        for (int j = 0; j < s2.length(); j++)
20        {
21            if (s1[i] == s2[j])
22            {
23                if (i == 0 || j == 0)
24                    dp[i][j] = 1;
25                else
26                    dp[i][j] = dp[i-1][j-1] + 1;
27            }
28        }
29    }
30
31    int maxLen = 0;
32    int end = 0;
33
34    for (int i = 0; i < s1.length(); i++)
35    {
36        for (int j = 0; j < s2.length(); j++)
37        {
38            if (dp[i][j] > maxLen)
39            {
40                maxLen = dp[i][j];
41                end = j;
42            }
43        }
44    }
45
46    string lcs = s1.substr(0, maxLen);
47
48    cout << "The longest common substring is: " << lcs << endl;
49    cout << "The length of the longest common substring is: " << maxLen << endl;
50
51    return 0;
52 }
```

D:\Assignments\gangadar\advan alg\Programs\Week5\_Assignment\x64\Debug\Week5\_Assignment.exe (process 22864) exited with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.

Press any key to close this window . . .



```
1 #include <iostream>
2 #include <string>
3 #include <vector>
4 using namespace std;
5
6 int main()
7 {
8     string s1, s2;
9     cout << "Enter first string: ";
10    cin >> s1;
11    cout << "Enter second string: ";
12    cin >> s2;
13
14    // DP Table
15    vector<vector<int>> dp(s1.length(), vector<int>(s2.length(), 0));
16
17    for (int i = 0; i < s1.length(); i++)
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19        for (int j = 0; j < s2.length(); j++)
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23                if (i == 0 || j == 0)
24                    dp[i][j] = 1;
25                else
26                    dp[i][j] = dp[i-1][j-1] + 1;
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34    for (int i = 0; i < s1.length(); i++)
35    {
36        for (int j = 0; j < s2.length(); j++)
37        {
38            if (dp[i][j] > maxLen)
39            {
40                maxLen = dp[i][j];
41                end = j;
42            }
43        }
44    }
45
46    string lcs = s1.substr(0, maxLen);
47
48    cout << "The longest common substring is: " << lcs << endl;
49    cout << "The length of the longest common substring is: " << maxLen << endl;
50
51    return 0;
52 }
```

D:\Assignments\gangadar\advan alg\Programs\Week5\_Assignment\x64\Debug\Week5\_Assignment.exe (process 20952) exited with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.

Press any key to close this window . . .

```
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84 Enter first string: AERYZXWE BNMSEWE
85 Enter second string: DP Table:
86 0 0 0 0 0 0 0
87 0 0 0 0 0 0 0
88 0 0 0 0 1 0 1
89 0 0 0 0 0 0 0
90 0 0 0 0 0 0 0
91 0 0 0 0 0 0 0
92 0 0 0 0 0 0 0
93 0 0 0 0 0 1 0
94 0 0 0 0 1 0 2
95 The longest common substring is: WE
96 The length of the longest common substring is: 2
97
98 D:\Assignments\gangadar\advan alg\Programs\Week5_Assignment\x64\Debug\Week5_Assignment.exe (process 2056) exited with code 0.
99 To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
100 Press any key to close this window . . .|
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## No Substrings

```
82
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84 Enter first string: ABDE
85 Enter second string: XYZQ
86 DP Table:
87 0 0 0 0 0
88 0 0 0 0 0
89 0 0 0 0 0
90 0 0 0 0 0
91 0 0 0 0 0
92 0 0 0 0 0
93 No common substring found.
94
95 D:\Assignments\gangadar\advan alg\Programs\Week5_Assignment\x64\Debug\Week5_Assignment.exe (process 14764) exited with code 0.
96 To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
97 Press any key to close this window . . .|
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## Numerical

